IN THE

Supreme Court of the United States

October Term, 1946.

No. 24.

HALLIBURTON OIL WELL CEMENTING COMPANY, a Delaware corporation,

Petitioner,

vs.

CRANFORD P. WALKER, and CRANFORD P. WALKER, D. A. WALKER, ROBERT P. MILLER and MILO C. KETCHUM, doing business as Depthograph Company, a co-partnership,

Respondents.

BRIEF ON REHEARING FOR CRANFORD P. WALKER, ET AL., RESPONDENTS.

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BRIEF ON REHEARING FOR CRANFORD P. WALKER, ET AL., RESPONDENTS.

Statement of the Case.

This case is before this Court for rehearing on a Writ of Certiorari granted by this Court at a time when Justice Jackson was absent in Europe. Before the original hearing on January 9, 1946, briefs were filed by both petitioner and respondents and were considered by the remaining eight justices. At the first hearing, the Court was equally divided and a *per curiam* order was entered affirming the decision of the Ninth Circuit Court of Appeals, which Court had held the patent in suit valid and

infringed by petitioner Halliburton Oil Well Cementing Company.

At the oral argument on January 9, 1946 Justice Reed was ill and absent from the bench during the entire hearing and Justice Murphy was also ill and present for only a part of the argument.

Upon a petition for rehearing filed by Halliburton Oil Well Cementing Company, a rehearing was granted to permit re-argument of the case before a full bench.

HISTORY OF THE LITIGATION:

Cranford P. Walker, the inventor, as owner of the patent, and Depthograph Company, a small co-partnership consisting of the inventor, Mr. Walker, his wife D. A. Walker, Milo C. Ketchum and Robert P. Miller, exclusive licensee under the Walker patent in suit, were operating a small service business rendering a service to various oil companies of locating the fluid level in oil wells, the pay for which service was the sole income of the partnership.

On July 16, 1941 plaintiffs Cranford P. Walker and Depthograph Company (respondents here) filed suit against Halliburton Oil Well Cementing Company, (petitioner here) for infringement of the Letters Patent in suit.

After trial in the District Court for the Southern District of California, a decision was entered by the District Court holding the patent in suit valid and infringed by Halliburton.

Petitioner Halliburton appealed from that decision to the Circuit Court of Appeals for the Ninth Circuit and

on December 28, 1944 the Ninth Circuit Court of Appeals affirmed the decision of the District Court and found that the patent in suit was valid and infringed by Halliburton.

Petitioner Halliburton then filed in the Ninth Circuit Court of Appeals a petition for rehearing before that Court, which petition was denied on June 12, 1945 and a *per curiam* opinion was entered, together with a concurring opinion written by Judge Denman, specifically considering the very questions presented to this Court by the Petition for Writ of Certiorari.

As pointed out above, after the filing of briefs on certiorari in this Court and the presentation of a full oral argument in January, 1946, resulting in the split decision noted above, petitioner Halliburton requested rehearing, stating as its grounds for urging a rehearing that the original hearing had not been had before a full Court.

It appears evident from the foregoing that petitioner Halliburton, a wealthy corporation involved in many activities relating to the oil industry, has utilized every legal device to prolong this litigation and, as will appear from a consideration of the questions presented for decision by this Court, has used as one of the devices for prolonging the litigation and for increasing the expense of this litigation to Walker and Depthograph, the assertion of its contentions as to principles of law which are wholly without merit and are untenable.

The Questions Presented.

Stripped of the many side issues touched upon in petitioner's briefs, actually the two questions petitioner is apparently presenting to this Court are as follows:

(1) Does the position of the Supreme Court in *General Electric Company v. Wabash Appliance Corp.*, 304 U. S. 364, overrule the principles stated in the case of *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U. S. 405, and which have been consistently followed since 1907 by this Court and the lower courts in considering claims in patents directed to *machines comprising a combination of several pieces of mechanism cooperating together to produce a new result*; and

(2) Can the doctrine expressed by this Supreme Court in *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U. S. 211 be so distorted as to permit its application to an entirely different state of facts and result in penalizing the inventor for attempting to improve a device upon which he has received patent?

Under the guise of asking this Court to determine only the two questions raised by its petition, petitioner's brief attempts to argue questions of novelty, anticipation and lack of invention, all of which questions are not before this Court and these arguments must be ignored (*General Talking Pictures Co. v. Western Electric Company*, 304 U. S. 175).

The statements which appear on the following pages of petitioner's brief are impertinent and certainly not addressed to the issues before this Court.

Page 29—The Patent Office and both lower courts held that the Lehr and Wyatt patent No. 2,047,974 did not disclose the invention in suit. This question is not now before this Court.

Page 45—The lower courts found petitioner has infringed the claims in suit and this Court cannot now review the question of infringement. Only the question of validity is before this Court.

Page 56—Both lower courts found the invention was a *new combination* and that the claims did not define an *old combination.* This question is not here for review.

Page 63—The lower courts did not find that there was only "one novel element" but found that the three-element combination was new over the prior two element combinations.

Pages 68 through 76—All of this argument is addressed to the question of infringement by petitioner's apparatus and this matter is not here for review.

The Invention.

THE INVENTION SUPPLIED A LONG FELT WANT:

In order for this Court to properly consider the questions presented by petitioner, a brief review should be made of the history of the development of the invention of the patent in suit and the contribution which it has made to the oil industry. Briefly stated, the invention of the patent in suit is directed to the solution of a problem which has long faced the oil industry but which had had no satisfactory solution until the invention by Walker of the apparatus illustrated, described and claimed in Letters Patent No. 2,156,519.

In the production of oil from oil wells, the well bore extends from the ground surface down through various earth strata into the oil bearing sand formation to tap the underground pool of oil. The oil in the underground formation is usually under considerable pressure due to the gases which have been trapped in the earth above the liquid oil and due in part to the downward forces exerted by water in the formations above the oil pool.

Thus when the well bore penetrates into the oil bearing sands, these pressures tend to force the oil from the formation into the well bore and upwardly in the well bore toward the ground surface. If the natural pressures in the earth formation are sufficiently high, the oil is forced upwardly in the well bore all the way to the ground surface and the well is known as a "flowing well."

If, however, the pressures are insufficient to force the oil up to the ground surface, a mechanical pumping apparatus must be inserted in the well bore to a position below the surface of the liquid column which has been forced into the well bore and the mechanical pump is then operated to lift the oil the remaining distance to the ground surface where it may be used.

If the pump is of sufficient capacity, it will remove the oil from the well bore as rapidly as the earth formation pressures force the oil into the well bore whereas if the pump has a lesser capacity or is operated less efficiently, it will remove the oil at some lower rate. On the other hand, if the pump is operated in such fashion as to remove the oil more rapidly than it flows into the well from the formation, the pump will operate inefficiently due to the fact that it will lower the standing column of fluid in the well bore down to the pump inlet and thereafter at

each stroke of the pump only a small quantity of liquid will enter the pump, the balance of the capacity of the pump merely pumping gas from above the surface of the liquid column.

THE INDUSTRY NEEDED THE INVENTION:

It has long been known by the oil industry that if the oil engineers could know or determine where the top of the fluid column in the well bore was located relative to the pump inlet *while the pump was actively pumping oil from the well,* the engineers could determine

(a) whether or not the pumping apparatus was adequate to produce oil from the well in an efficient manner; and

(b) in cases where either government regulation or voluntary agreement by the oil companies made it necessary or desirable to produce oil from the well at a small proportion of the maximum capacity of the well, the pumping apparatus could be selected and operated at a rate such as to produce oil from the well with assurance that the production rate would be that which had been fixed by the oil umpire or by the government regulation.

NO SOLUTION OF PROBLEM BEFORE WALKER'S INVENTION:

However, in spite of the fact that it had long been known that this information was desirable, and in spite of the fact that many ingenious attempts had been made to determine the information, namely, how high in the well bore is the surface of the oil column *while the pump is actively operating,* no system or apparatus existed which

would give any satisfactory and accurate answer until the invention in the patent in suit was made by Mr. Walker.

To appreciate the difficulty of the problem which was solved by the invention in the patent in suit, the Court should keep in mind the fact that an oil well is a relatively small diameter hole extending for thousands of feet down into the earth and that the oil well includes a "casing" or pipe which is inserted into the earth bore to make a metal lining for the earth bore. Then down through the casing there is extended a "flow tubing" or smaller pipe, upon the lower end of which the actual pump is located and the oil pumped by the pump flows upwardly to the ground surface through this flow tubing.

PREVIOUS ATTEMPTS WERE UNSUCCESSFUL:

One of the previous attempts to obtain the information as to the location of the fluid surface in the well was that of attempting to insert in the annular space between the small flow tubing and the larger casing a pipe or tube or wire which, if it could be lowered a sufficient distance to reach the surface of the liquid column in the well, would give an indication at the ground surface as to the location of the fluid surface. This was totally unsuccessful for the reason that while the well bore is theoretically straight, actually it is more in the shape of a corkscrew and at one point in the well the flow tubing will touch one side of the casing while at other points in the well it will touch other sides of the casing, making a barrier against the insertion of any metal device all the way from the ground surface to the top of the fluid column.

UNION OIL COMPANY'S EXPERIMENTS WERE UNSUCCESSFUL:

The record of this case shows that prior to Mr. Walker's invention at least two other attempts had been made to obtain the fluid level location information by "sonic" methods, namely, the introducing of a sound into the well, and measuring the location of the fluid surface by attempting to time the passage of the sound from the ground surface down through the well and its reflection back to the ground surface from the top of the fluid column. There is testimony to the effect that in 1927 the Union Oil Company made some experiments along this line but these were so unsuccessful that they were abandoned. [R. 512-513.]

LEHR AND WYATT'S RESULTS WERE TOO INACCURATE:

In the years 1931 and 1932 Harold Wyatt and Paul Lehr, employed by the Shell Oil Company, started experiments with sound apparatus of the type which later resulted in the Lehr and Wyatt patent No. 2,047,794 [R. 1102-1105], in which they attempted to locate fluid levels in oil wells by creating a sound or pressure wave ("pressure wave" as used in the patent in suit meaning a pressure wave having all of the characteristics of a sound wave except that it may be below the range of detection by the human ear) in the annular space between the flow tubing and the casing and measuring the time which elapses between the creation of the pressure wave and the arrival at the ground surface of

its reflection from the top of the fluid column. The Lehr and Wyatt theory was that the pressure or sound wave would travel down and back up through the well in accordance with the known laws of physics relating to sound, namely, that the sound would travel at a fixed rate of speed.

Lehr and Wyatt discovered, however, that the rate of speed of sound was different for each well that they measured. This is due to the difference in the character of the gas in the well from the character of the gas in an adjacent well, and to the difference in temperature in one well from the temperature existing in an adjacent well. Hence the results obtained by Lehr and Wyatt did not give truly the location of the fluid surface and their attempt to obtain accurate information as to the location of the fluid surface was baffled.

Lehr and Wyatt then suggested that a sample of the gas in each well should be analysed as to its character, its pressure and its temperature and they devised a methematical formula by which they hoped they could determine the rate of speed of sound in any particular well under measurement *but again they discovered that even the corrective mathematical formula did not give them accurate results,* probably due to the fact that in any given well the character of the gas and its temperature varied between wide limits between the ground surface and the top of the oil column.

WALKER UNDERTOOK PROBLEM OF PRODUCING ACCURATE USEABLE MEASUREMENTS:

In October, 1935 Lehr and Wyatt, having been unsuccessful in obtaining any accurate fluid level measurements, entered into an agreement with Walker whereby Walker was to attempt to perfect and commercialize a satisfactory fluid level measuring apparatus. [R. 156.]

Walker started experimenting, using the apparatus which Lehr and Wyatt had already constructed and throughout the months of October and November, 1935 Walker experimented with this apparatus and found that it was unsatisfactory. [R. 169.]

Walker made additional apparatus during December, 1935 and January and February, 1936, among which pieces of apparatus was a "calibration tube" which is illustrated at 53 in the patent in suit, the purpose of which was to permit a sample stream of gas from the well under measurement to flow through the calibration tube while apparatus associated with the tube was supposed to measure the sound-speed characteristics of the gas in that well.

While this calibration tube gave better results than had been previously obtained by anyone, it was still not entirely satisfactory and the system did not give accurate results but only a closer approximation than had ever before been achieved.

From March, 1936 to March, 1937 Mr. Walker attempted to interest oil companies in using the fluid level measuring system but encountered difficulty due to the fact that the accuracy of the results was not as good as was required by the oil industry.

THE OLD "TWO ELEMENT" COMBINATION WAS A FAILURE:

For the purposes of this hearing, Mr. Walker's apparatus comprised in effect two basic elements or pieces of mechanism:

(1) a means for producing a sound or pressure impulse in the annular space between the casing and the flow tubing of the well (in the patent in suit, the apparatus connected to the well including a tank of gas 11, a gas chamber 12 and a quick opening valve 16 by which a "slug" of gas could be suddenly injected into the well to create a sound wave or acoustical wave which would travel down and back through the well); and

(2) a means or apparatus for recording on a moving record strip

(a) the instant of the creation of the pressure wave in the well; and

(b) the instant of the arrival back at the ground surface of the reflection of the wave from the surface of the fluid column (in the patent in suit, this apparatus is the diaphragm mechanism 22, the diaphragm 23 of which will move when the well gas is disturbed by the change in pressure resulting from the injection of the gas "slug" and the arrival of the echo from the fluid surface to move the small mirror 26 to draw a line upon the record chart 39, as illustrated in Fig. 2, the peak *b* representing the instant of injection of the gas into the well and the peak *d* representing the arrival of the reflection from the fluid surface).

Were it not for the fact that the speed of sound in different wells is not uniform, and not the same as it is in air the length of time it took the record tape 39 to move the distance between the peaks *b* and *d* multiplied by the normal speed of sound in air (1100 feet per second) should tell how many feet below the ground surface the fluid surface in that particular well was located; but as pointed out in the patent in suit the speed of sound in one well may be 800 feet per second while in another well it may be 1400 feet per second, and Mr. Walker had no way of accurately knowing the exact speed of sound in any well under measurement.

SUCCESS ACHIEVED BY WALKER'S "THREE-ELEMENT" COMBINATION:

In March, 1937 [R. 196] Mr. Walker made the invention in the patent in suit, by adding to the previously used apparatus elements 1 and 2 above, a mechanism which would allow the recording on the record tape 39 the echoes or reflections from each of the couplings in the flow tubing pipe (the flow tubing in a well is usually made up of a considerable number of sections of pipe of approximately uniform length, either about 20 feet or about 30 feet, connected together by pipe couplings slightly larger in diameter than the diameter of the flow tubing pipe so that the couplings form a shoulder extending into the annular space between the flow tubing and the casing, which shoulder will, like the fluid surface, reflect back a part of the sound wave passing through the well).

Walker's invention consisted therefore in recognizing that if he could record on the record tape the echoes from all of the tubing couplings or if he could record the echoes from at least a number of successively adjacent couplings, he could measure the distance along the tape occupied by the recordings of the tubing coupling echoes and knowing the length of each of the pipe sections between the couplings, the distance along the tape between the peaks *d* and *b* could be accurately computed since that distance would be exactly proportional to the distance along the tape occupied by the tubing collar echo recordings.

To accomplish this result of making recognizable recordings of the tubing collar echoes, Mr. Walker used as this third element:

> (3) a piece of mechanism [R. 196] which would filter out other noises and vibrations [R. 239 and 777] and make the recorder more responsive to the frequency of the approximately evenly spaced recurring echoes from the tubing collars. [R. 196.]

Instantly Walker had created this new 3-element combination in place of the previously used 2-element combination, he achieved fluid level measurements of such great accuracy that even the oil engineers to whom he demonstrated his apparatus would not believe that the results were true.

Thus Mr. Walker's addition of the third element to the old 2-element combination produced success in the accurate measurements of fluid levels in wells whereas all previous attempts had resulted only in failure.

The Patent in Suit.

The patent in suit describes the problem which was attacked by and solved by Walker and describes the requisite features of an apparatus to accomplish the result of accurately measuring the fluid levels in oil wells.

PATENT DRAWING AND SPECIFICATION FULLY DISCLOSE ONE EMBODIMENT:

In compliance with the requirements of Section 4888, R. S., Mr. Walker illustrates and describes in detail one embodiment of the invention as comprising mechanical apparatus consisting of:

(1) a means for producing a pressure or sound wave in the annular space between the well casing 2 and the flow pipe 5, the apparatus specifically illustrated and described being apparatus for suddenly injecting a quantity of gas into the space from a gas measuring chamber 12 loaded with a supply of gas from a tank 11 and from which the gas is suddenly released into the well by means of a quick opening valve 16;

(2) a means for receiving and recording the changes in gas pressure within the well, resulting from

(a) the sudden injection of the "slug" of gas; and

(b) the arrival at the ground surface of the reflections or echoes of the pressure or sound wave reflected from the fluid surface 6 and each of the couplings (tubing collars) 10 in the flow tubing 5, the apparatus specifically described and

illustrated being the diaphragm 23, the light beam reflecting mirror 26 and the recording tape 39; and

(3) a means for "accenting" the recordings of the echoes from the tubing collars so as to recognizably record such tubing collar echoes and to filter out and suppress other extraneous noises and disturbances [R. 239 and 777] which might interfere with the clean-cut recording of the tubing collar echoes, the specific apparatus illustrated and described comprising a tube 18 connecting the diaghragm 23 with the well casing and adapted to have its length adjusted to approximately one-third the length of a section of the flow tubing 5 between a pair of adjacent couplings or collars 10.

THE CLAIMS DEFINE THE NOVELTY OF THE INVENTION:

The Court must remember that the novelty in the Walker invention is not that the third element in itself is new but that *it was new to use the third element in combination with the other two elements.* The claims define the new invention in terms of "means" for each of the three elements and defines each of these "means" by a definition of what type of structure is required, what its function is, and how it must work in combination with the other elements.

THE CLAIMS IN SUIT:

The claims in suit are as follows:

1. In an apparatus for determining the location of an obstruction in a well having therein a string of assembled tubing sections interconnected with each other by coupling collars,

means communicating with said well for creating a pressure impulse in said well,

echo receiving means including a pressure responsive device exposed to said well for receiving pressure impulses from the well and for measuring the lapse of time between the creation of the impulse and the arrival at said receiving means of the echo from said obstruction, and

means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars of said tubing sections to clearly distinguish the echoes from said couplings from each other.

13. In an apparatus for determining the unknown location of an obstruction in a well having a string of assembled tubing sections therein connected by couplings,

means communicating with said well for creating a pressure impulse in said well to produce echoes of said impulse from the couplings and other obstructions in said well,

echo receiving and registering means coupled to said well to expose said receiving and registering means to pressure variations produced in said well by echoes from said obstructions, and

means associated with said receiving and registering means to accent the registration of tubing coupling echoes.

14. In an apparatus for determining the unknown location of an obstruction in a well having a string of assembled tubing sections therein connected by couplings,

means communicating with said well for creating a pressure impulse in said well to produce echoes of said impulse from couplings and other obstructions in said well,

pressure responsive echo receiving and registering means coupled to said well to expose said receiving and registerng means to pressure variations in said well produced by echoes from said obstructions, and

interference eliminating means associated with said receiving and registering means for limiting the response of said receiving and registering means to the registration of echoes from actual obstructions in the well whereby the registered echoes of the tubing couplings may be readily distinguished from each other and from the echoes from other actual obstructions in the well.

15. In an apparatus for determining the unknown location of an obstruction in a well having a string of assembled tubing sections therein connected by couplings,

means communicating with said well for creating a pressure impulse in said well to produce echoes of said impulse from the couplings and other obstructions in said well,

pressure responsive echo receiving and registering means coupled to said well to expose said receiving and registering means to the pressure variations produced in said well by echoes from said obstructions, and

resonance means associated with said receiving and registering means to produce therein a natural acoustical period of oscillation so related to the frequency of the echoes from the tubing couplings as to accent the registration of the tubing coupling echoes.

17. In an apparatus for determining the unknown location of an obstruction in a well having a string of assembled tubing sections therein connected by couplings,

means communicating with said well for creating therein a pressure impulse to produce echoes of said impulse from the couplings and other obstructions in said well,

pressure responsive echo receiving and registering means

having a natural frequency of oscillation so related to the frequency of the echoes from said tubing couplings as to accent the registration of said echoes, and

means interconnecting said receiving and registering means to said well to expose said receiving and registering means to pressure variations in said well.

Petitioner's Infringing Activities.

Petitioner Halliburton Oil Well Cementing Company is a fairly large corporation engaged in many and varied activities in the oil industry, only a part of which is performing for the oil producing companies fluid level measurements by means of its apparatus which it calls the "Echo-Meter." Petitioner purchased this part of its business in May, 1940, after it had investigated patents relating to this type of activity and after it had full knowledge of the Walker patent in suit [R. 709].

Petitioner purchased this "Echo-Meter" business from International Geophysics, Inc., which company, directed by Mr. J. J. Jakosky, had been engaged in operating the "Echo-Meter" system (Petitioner's Brief, p. 18) in direct competition with Mr. Walker's Depthograph Company, and which company had been formally notified by Walker that its activities were an infringement of the patent in suit [R. 710].

The history of Jakosky's company was that in late 1936 the Union Oil Company requested Mr. Jakosky to develop a fluid measuring apparatus which would compete with Mr. Walker's Depthograph apparatus which Walker had been commercially exploiting (Petitioner's Brief, p. 17). In November, 1936 Mr. Jakosky visited a well at which Walker was making measurements with his Depthograph apparatus [R. 203-204] and took photographs of the mechanism Walker was then using.

About July, 1937 [R. 204] Mr. Walker discovered that Mr. Jakosky's company, International Geophysics, Inc., was in the field making fluid level tests with the same type of infringing mechanism and apparatus which have been used by petitioner Halliburton Oil Well Cementing

Company subsequent to its purchase in 1940 of the "Echo-Meter" business.

THE INFRINGEMENT IS DELIBERATE AND WILFUL:

In view of the fact that Halliburton purchased the Jakosky—International Geophysics "Echo-Meter" system *after having full knowledge of the Walker patent*, it is obvious that the infringement was deliberate and wilful and that petitioner started its activity with full knowledge of Walker's inventions and patents, obviously in the hope that, by reason of its size, its wealth and its ability to conduc. prolonged and expensive litigation, it could pirate Walker's contribution to the oil industry and obtain the sanction of the Courts to its activities.

In its brief petitioner dwells at some length upon the "differences" between the apparatus it employs and that specifically illustrated and specifically described in the patent in suit but it nowhere denies that its apparatus includes the three elements of the Walker patented combination, namely:

(1) a means for producing a pressure impulse in the well, namely, a gun 10 for firing a cartridge or shotgun shell into the annular space between the casing 1 and the flow tubing 2 of an oil well [R. 713 and petitioner's brief, pp. 21-22];

(2) a means for registering and recording the echoes of the pressure or sound waves from the fluid surface and couplings of the flow pipe; and

(3) a means for filtering out extraneous noises and thus render the recorder more sensitive to clearly record the tubing collar echoes, namely, the construction of the electrical amplifier and filter 21 used with elements 1 and 2 above.

While petitioner purports to be presenting to this Court only two specific questions of law to be considered by this Court, in its brief it diverges from this to include arguments directed to questions of comparisons of specific structure shown in the patent and that used by petitioner, to questions of the equivalency of such structures, and to questions of patentability over prior art, none of which should be considered by this Court in determining the answers to the two questions upon which certiorari was granted.

PETITIONER'S ATTEMPTED DISTINCTIONS ARE REFUTED BY THE RECORD:

However, since petitioner's brief does dwell upon these items, it will be helpful to this Court to note that petitioner's assertion on page 35 of its brief that its electrical filter and amplifier does not have a "natural frequency of oscillation" as called for specifically in Claim 17; that it is not a "tuning" device as called for specifically in Claim 1; that it is not resonant as called for specifically in Claim 15; and that it does not "accent" the tubing collar echoes as called for in Claims 13 and 14, are refuted by its own expert, Dr. MacKeown, who on cross-examination admitted that petitioner's filter *raises the tubing collar echoes above the level of other noises* by cutting down disturbances more than it cuts down the signal (tubing collar echoes) [R. 455]; that the *amplifier-filter combination acts to suppress all unwanted frequencies* and leaves the tubing collar frequencies at some distinguishable point above them [R. 456]; that the filter has a *natural period of oscillation corresponding to the frequency of tubing collar echoes* [R. 469]; while petitioner's own

instruction manual for the use of its device [Exhibit 11-C, R. 735-737] states:

"The electrical filter is designed to filter and selectively amplify the frequency produced by reflections from the tubing collars. * * * In addition to its switching action this control adjusts the amount of energy fed back from the output to input circuits of the amplifier. This energy causes the amplifier to have a *tendency to oscillate at the frequency* for which the filter is set. * * * With higher settings the *tendency to oscillate increases.* The Feed-back should never be increased to a point where oscillation (14) occurs without some exciting signal to start it * * * When using the filter on a well, one record should always be made in the usual manner with the Decrement turned 'Off.' By measuring as many tubing collars as possible on this record the average joint length on the record is then determined. * * * Then, referring to the calibration curve for the filter, the setting corresponding to this record length †is used. * * * If this is done the calculated fluid depth may be in error, if the frequency setting of the filter is not *exactly the same as the collar frequency of the well.* When it is difficult to get good collars the feed-back control should be set so that when the transducer volume control (16) is set at the maximum necessary for the well the push button will cause the filter to *generate oscillations* for not over 10 cycles. The filter will give the transducer an over-all *amplification somewhat greater than normal for signals of the frequency for which the filter is*

†The printed record, page 736, should have been corrected by the insertion of the words "is used." ahead of the expression "of frequency inasmuch as variations in the recorder motor speed will change the apparent frequency of the filter." and that the expression beginning "of frequency" should have been omitted to make the printed record conform with Exhibit 11-C as introduced in evidence.

> *set.* This amplification increases as the feed-back is increased. The filter will have a tendency to decrease the sharpness of the fluid, tubing catcher, and liner top breaks on the record and in some cases it will be necessary to record these points on one record without the filter and then use the filter to improve the tubing collars on the record." (Italics ours.)

These admissions by petitioner's expert and these instructions in petitioner's instruction manual clearly demonstrate:

(a) that the electrical filter used by petitioner is adjusted or "tuned" to the frequency of the tubing collar echoes (compare with Claim 1);

(b) that it has a natural frequency of oscillation (compare with Claim 17);

(c) that it is designed to *"filter and selectively amplify the frequency produced by reflection from the tubing collars."* (Compare with Claims 13, 14 and 15.)

(d) and that it is an "interference eliminating means." (Compare with claim 14.)

In addition, petitioner has urged throughout this litigation [R. 396] that its filter is like that shown in the Scott patent, Exhibit 0-13 [R. 1108-1131] in which patent it is stated:

> "The present invention relates to electric systems, and more particularly to systems for selecting predetermined frequencies from currents or voltages containing a number of different frequencies."

Also on page 5 of this patent, beginning in line 63 in Column 1 and extending through line 8 in Column 2, there is described the manner in which the filter may be adjusted (tuned) for different frequencies.

Summary of the Argument

As to Question No. 1:

(1) It is clear from the file history of the patent in suit that both Walker and the Patent Office intended the claims in suit to cover electrical apparatus such as is used by petitioner.

(2) It is clear that the Patent Office knew of the apparatus used by petitioner and its predecessor and intended that such apparatus was to be considered the equivalent of the apparatus specifically illustrated and described in the patent in suit.

(3) It is evident that Walker's claims in suit are not indefinite since they define Walker's new combination of three elements, each of which is admitted by petitioner to have been known in the art. Hence when Walker's claims recite the three necessary elements, the mechanisms intended are readily identifiable as known devices and their identification in the claims is amply sufficient to tell those skilled in this art what types of apparatus must be selected and how they can be combined to practice Walker's new invention.

(4) The only doctrine established by *General Electric Company v. Wabash Appliance Co.*, 304 U. S. 364, is that the claims must define the limits of the invention in a manner understandable by those skilled in the art to which the invention relates so that at least those members of the public may know what lies within the scope of the claim and what lies without.

(5) While the opinion in the *General Electric v. Wabash* decision uses language condemning the use of *only* functional statements to define the invention, the facts of

that case were that the claims were so vague and indefinite in defining the size of tungsten grains which would work and those which would not that they failed to define the invention and left the public (those skilled in the art) uninformed as to what was covered and was not covered.

(6) The facts in the instant case distinguish from the *General Electric v. Wabash* case in that here Walker's claims to the invention are clear and complete, leaving the public *fully informed* as to how to select known mechanisms for every element in his new combination *and with no necessity to perform further experiments to determine what will work and what will not.*

(7) The doctrine of the *General Electric v. Wabash* case does not apply in the instant case because the facts in the *General Electric* case were that the claim was not for a combination of mechanisms but was for a "single means," the single means or element constituting all of the purported new invention, the claim was so broad as to fail to define that *single* means with enough particularity to advise the public what would work and what was intended to be covered by the claim.

(8) In defining an invention in a new combination of several element mechanisms, the use of language such as "means" and "mechanism" followed by the definition of such means by a statement of how the means is to work in the combination was approved in 1907 in *Continental Paper Bag Company v. Eastern Paper Bag Company*, 210 U. S. 405, and since that time that mode of expression has been the criterion of the manner in which a patentee may obtain some measure of breadth in his claims.

(9) To distort the *General Electric v. Wabash* doctrine as petitioner urges here, would automatically limit all patent claims to the specific embodiment shown in the drawings and described in the specification of the patent and no claim would cover equivalents selected by an infringer in an effort to pirate the invention by evasion.

As to Question No. 2:

(10) The facts of the instant case are so different from those in the case of *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U. S. 211, that the doctrine of that decision does not apply here.

(11) To distort the *Schriber-Schroth* doctrine as petitioner urges here, would penalize a patentee if he attempted to secure additional patents on improvements subsequent to the issue of his first patent.

(12) A patentee who has received a broad patent on his invention and in a later improvement application acquiesces to a ruling by the Patent Office that his later improvement does not amount to invention over what was originally protected in his first patent, is not thereby estopped to urge the claims of his first patent are as broad as the Patent Office originally intended them, since to so hold would be to alter the terms of a patent contract by events which occurred after the contract was executed.

(13) That petition urges under question No. 2 such an unwarranted and absurd contention to this Court is another demonstration of petitioner's attempts to unduly prolong this litigation at the expense of the patentee.

Argument.

AS TO QUESTION NO. 1:

Point (1):

In its attempt to urge this Court to find that the electrical apparatus employed by the petitioner is not the equivalent of the specific structure illustrated and described in detail in Walker's patent, petitioner urges (on page 34 of its brief) that there was no basis for assuming that in drawing the claims in suit Walker intended to cover the use of an electrical filter or that the Patent Office intended to grant Walker a monopoly on such use. This is specifically contradicted by the record in this case, particularly the following:

(1) The file history of the patent in suit [Ex. T, R. 1416-1544] shows that on February 11, 1939 a petition was made to the Commissioner of Patents to make action on this application special because of the competitive activities of petitioner's predecessor, International Geophysics, Inc. [R. 1516-1518], and that the Commissioner on February 13, 1939 granted the petition to make this application special, the very purpose of which was to secure claims in this patent to cover the electrical apparatus then being used by International Geophysics, Inc., later purchased by petitioner and now being used by petitioner.

Not only did Walker intend the claims of this patent to cover the type of electrical apparatus now being used by petitioner but *the Patent Office in granting the petition to make the application special has evidenced the intention of the Patent Office that*

the claims should extend to and cover the very type of apparatus which respondent in this case complains is an infringement of his claims.

(2) On the face of the patent in suit there is exhibited the clear intention of both Walker and the Patent Office that this patent should cover not only the tuning pipe 18, but also other equivalent mechanisms which could be used for the purpose of carrying the patented invention into practice.

For evidence of that, the Court's attention is called to the fact that Claims 2 and 3, for example, are narrow claims directed to the specific structure disclosed by Walker, namely, "a pipe coupling said pressure responsive device to the well, means for adjusting the effective length of said pipe to tune said pressure responsive device to one of the harmonics of echoes of said impulse received from the coupling collars of said tubing string." The claims in suit which were also granted by the Patent Office are not so limited in their language. *By the very grant of the broader claims it is clear that not only Walker expected the broader claims to cover other apparatus but that the Patent Office also expected the broader claims to cover apparatus considered equivalent to the specific embodiment shown and described in the drawing and specification.*

In a copending application filed by Walker with the intention of covering certain details of an electrical apparatus designed by Walker [Exhibit L], claims addressed to the use of an electrical tuning device for the purpose of accenting the tubing collar echoes were rejected by the

Patent Office as unpatentable over the Walker patent in suit as follows:

> †"Claim 35 is rejected as defining nothing patentable over Walker 2,156,519. The Walker patent discloses means for tuning mechanically to the selected echo, but it is obvious that electrical tuning could be used instead in a system comprising an electrical receiving circuit. The two species are not patentably different." [R. 1046-1047.]

while at 1060 in the same file history the Examiner states:

> "The equivalence of electrical tuning and mechanical tuning for selective reception was thought to be so generally recognized that citation of an illustrative reference was not considered necessary. In view of applicant's request for further explanation, however, the Holland patent is referred to as one illustration of the interchangeability of mechanical and electrical tuning for selection purposes."

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†Claim 35 of that application reads as follows:

> "35. In a system of receiving and translating pressure echoes from a well, a microphone adapted to translate pressure variations impinging thereon into variations of electric current, means coupling said microphone to said well to expose said microphone to gas pressure in the well, means responsive to variations of said electric current, for describing an observable wave pattern reproduction of the pressure variations in said well, an electric circuit including said microphone and said current responsive means, and electrical tuning means interposed in said circuit between said microphone and said current responsive means for causing said current responsive means to respond more readily to periodically recurring echoes from a series of similar obstructions spaced substantially uniformly along the well than to echoes from pressure variations emanating from other sources." [R. 1039.].

It is obvious, therefore, that in the grant of the Walker patent it was intended by both Walker and the Patent Examiner that within the terms of the patent "contract" was to be included protection to Walker for both the specific mechanical embodiment illustrated and described in the drawings and specification and also electrical equivalents of such structure *and the petitioner's apparatus was specifically intended by the Patent Office and Walker to be covered by the claims in suit.*

Petitioner in its brief at page 36 attempts to minimize the effect of the action by the Patent Office in the file history of the patent in suit by stating that "We submit that consideration of an Examiner's statements for this purpose is improper." That consideration of such statements by a Patent Office Examiner is not only proper but is exceptionally helpful to this Court is demonstrated by the fact that such expressions are expressions of an expert opinion by the Patent Office.

Note that the file history, Exhibit L, is a part of *petitioner's own evidence* in this case.

Petitioner now seeks to avoid the consequences of petitioner's own introduction of the file history of Walker's electrical patent [Petitioner's Exhibit L] after petitioner had insisted on Walker's producing this file history and insisted on making it a part of petitioner's evidence at the trial. [R. 514.]

From the foregoing it is obvious that *both Walker and the Patent Office knew about the apparatus used by petitioner's predecessor and that Walker's patent was intended to cover the very apparatus now being used by petitioner.*

Point (2):

From the foregoing consideration of the file history of the two applications, Petitioner's Exhibits T and L, there is but one conclusion which can be drawn, and that is that it was intended that the apparatus used by petitioner was to be considered the equivalent of the apparatus specifically illustrated and described in the specifications of the patent in suit.

Point (3):

In urging this Court to consider Walker's claims as indefinite, petitioner defeats its own purpose by pointing out in its brief that each of the elements of Walker's 3-element new combination was individually old and known to the art (Petitioner's Brief, pp. 10 and 18). Hence Walker's definition of each of the elements of this new combination by reciting the type of apparatus or mechanism each element must be and by pointing out how each of these elements cooperates with the other in his new combination, he is referring to known mechanisms and is definitely instructing the public what to select to make up the new combination and defining to the public exactly the scope of the invention and of the claims.

Instead of Walker's claims being indefinite, petitioner, in effect, admits that Walker's claims teach the selection of old and known "means" and how to combine them into his new 3-element combination without requiring further experimentation to determine what means will work and what will not.

Point (4):

All of petitioner's argument addressed to the support of its contention that the decision of the Supreme Court in *General Electric Co. v. Wabash Appliance Corp.*, 304 U. S. 364, is an attempt to have this Court misconstrue the language of that decision to cover a set of facts entirely distinct from and distinguishable from the facts in the instant case.

In the *General Electric Company* case the Court was presented with the following facts:

(a) The patentee was attempting to obtain a patent for a particular kind of lamp filament for an electric lamp in which the filament would not sag while in use;

(b) The specifications of the patent taught only that the inventor had discovered that if the grain size of the tungsten particles used in making the filament was properly selected, a non-sagging filament would result;

(c) It does not appear from the opinion where the patentee anywhere disclosed that he had discovered the limits of the range between the largest particles that would work and the smallest particles that would work; and

(d) In the claim there was no definition of the limits of grain size which the patentee claimed would work to distinguish from grain sizes which would not accomplish the desired result but instead the claim in effect stated "I claim any grain size which will produce a non-sagging filament," and thus the claim does not inform the public as to what is intended to

be covered by the patent and what would be outside of the scope of the claim.

In the *General Electric Company* case the Court found that the inventor had failed to set forth in his claim the limits of his invention by failing in the claim to specify the difference between what would work to accomplish the result and what would not.

The Court did not in that case establish a doctrine that a statement of function used in a claim in an attempt to correctly define the limits of the claim was fatal or necessarily bad. The Court in that case merely repeated the well established patent law principle that an inventor must define his invention in such manner as to teach the public how to practice his invention and inform the public what was outside the scope of the claimed invention.

Point (5):

In expressing its decision in the *General Electric Company* case, the Court at 371 used the language:

> "A patentee may not broaden his product claims by describing the product in terms of function."

In effect, the actual decision in the *General Electric Company* case and the only decision which could be entered by the Court under the facts presented in that case was that the patentee's claim was void for lack of any definition of the limits of his invention.

Petitioner has grasped, *not at the import of the General Electric Company case, but at merely a few words of the language expressing the decision,* and is urging this Court to extend the principle laid down in that case to cover

a totally different situation in which there is no question as to the adequacy of disclosure or the definition of the limits of the invention in the claim.

Point (6):

The facts in the instant case are entirely distinct from the situation presented to this Court in the *General Electric Company* case. Here even petitioner does not question the adequacy and completeness of the disclosure in the patent in suit of one embodiment of apparatus which will accomplish the new result obtained by Mr. Walker.

While petitioner urges that the claims are indefinite in their use of expressions such as "means," followed by a statement of the function of each of the means and how it cooperates with the other mechanism in the combination, petitioner cannot say that the public is not fully apprised of what type of mechanism would be selected by anyone attempting to practice the teachings of the Walker patent. In fact, petitioner argues that all such mechanisms were old and were known. Hence there is no indefiniteness in the Walker claims since those claims contain a full and complete definition of the limits of the invention and the limits of the type of mechanism which must and can be used to achieve Mr. Walker's new result.

Moreover, petitioner in its argument overlooks and is strangely quiet as to the fact that each of the expressions defining Walker's third element in each of the claims is not merely a "means" but is a definition of a particular kind of means.

In Claim 1 the third element is recited as a "tuning" means.

In Claim 13 the third element is recited as an "accenting" means.

In Claim 14 the third element is recited as "interference eliminating" means for "limiting the response of the receiving means" to certain frequencies.

In Claim 15 this third element is defined as a "resonance" means while in Claim 17 it is recited as a means having "a natural frequency of oscillation."

WALKER'S CLAIMS ARE DEFINITE WHEN READ BY SOUND ENGINEERS:

Every engineer dealing with sound, acoustics, electricity, radio and phonographs knows that "interference eliminating" means may be either an acoustical means such as a pipe of given length or may be an electrical filter in an electric circuit which translates the acoustical sound waves into electrical waves. Every such engineer knows that "resonance means" may be a pipe or box of known dimensions as an acoustical resonator or may be a tuned electric circuit such as is employed by the petitioner. Every such engineer knows that an "accenting" means for the purpose of accenting certain desired frequencies and suppressing other undesired frequencies may be either a mechanical device such as a pipe or tube or box of known dimensions or may be an electrical filter tuned to the desired frequency and when so tuned they will suppress the passage of other frequencies. Every such engineer knows that a means having "a natural frequency of oscillation" may be either a mechanical device which has a natural oscillation frequency corresponding to some acoustical wave frequency or it may be an electrical device such as a filter or

tuned electrical circuit which has some selected natural frequency of oscillation.

Hence Mr. Walker's claims being addressed to those skilled in the art teaches these engineers and these persons skilled in the art the kind of mechanism which must be used as the third element of Walker's new combination to achieve the new Walker result. As stated by petitioner, *all of such mechanisms were old and known to those skilled in this art.*

Far from being indefinite, Walker's claim 1 states clearly to the sound engineer: "Select from the tools of your trade a known 'tuning' device, acoustical or electrical, tune it to the frequency of the tubing collar echoes, and connect it with the recording means. It will suppress other frequencies and you will get clear readable tubing collar records." Claim 15 tells him to select a known device of the "resonance" type; Claim 14 tells him to select a known type of device which is known from his previous engineering knowledge will limit the recording means to record known selected frequencies. Claim 13 tells him to select a known device which from his previous knowledge he knows will pass the tubing collar frequencies and suppress other frequencies to thus accent the recording of the tubing collar choes. Claim 17 tells him to add to the pressure responsive echo receiving and registering mechanism a device which will act with the recording mechanism to give the system a natural frequency of oscillation corresponding to the tubing collar echo frequencies and that if he chooses a known device having these known characteristics he will make the tubing collar recordings more clearly registrable and recognizable.

Walker's invention was not in building his tube or pipe of a given length—*it was his recognition of the fact that by tuning his system to the frequency of the tubing collar echoes the record would be accurate and self-adjusting for the speed of sound in the particular well under measurement.* The problem was a little more complex than is indicated in the foregoing statement of the fundamentals by reason of the fact that joints in the casing produced echoes somewhat similar to the tubing collar echoes and other disturbances would resemble tubing collar echoes. Walker had discovered that by tuning his system to the average frequency at which the echoes from the tubing collars arrived at the ground surface, the result would be a clear recording of these echoes and the suppression of other disturbances, such as reflections from the casing joints.

Having taught how to make and use his *three*-element combination, the particular apparatus to be used as the third element was available for selection and use. This, petitioner admits.

More important perhaps is the fact that once a teaching was made in the specification of the Walker patent, those skilled in the art had no difficulty in selecting either electrical or mechanical apparatus to make up the combination. Even petitioner nowhere indicates that it had difficulty in finding out what apparatus could be used *after it knew of Walker's disclosure and the principles of the Walker invention.*

Certainly nothing in the record of this case even purports to indicate that anyone had to perform *experiments* to determine what type of apparatus would work in Mr. Walker's claimed combination.

Point (7):

The instant case can be further distinguished from the *General Electric v. Wabash* case in that the claims in the *General Electric* case are not directed to a machine or a combination of machine elements but instead are directed to a *product,* which product was not only a *single element device.* Moreover, the single element was the sole part of the purported invention. Hence the failure of the patentee's claim to even define that one element was fatal. In the instant case the invention claimed is a 3-element combination, in which the three elements, if put together in the manner taught by Walker in his specification and clearly defined by Walker in each of his claims, will accomplish the new result.

NINTH CIRCUIT COURT FOUND WALKER'S CLAIMS WERE DEFINITE:

As is most aptly stated by Judge Denman of the Ninth Circuit Court of Appeals in his opinion in the instant case [R. 1614-1616]:

> "Appellant's principal contention on its petition for rehearing concerns the patenting of a combination of functional means such as claimed in typical claims 1 and 14, cited in the opinion.
>
> "Claim 1 is for a combination in
>
> "(A) 'an apparatus for determining the location of an obstruction in a well having therein a string of assembled tubing sections interconnected with each other by coupling collars' of the following three 'means,' with
>
> "(B) 'means communicating with said well for creating a pressure impulse in said well,' and

"(C) 'echo receiving means including a pressure responsive device exposed to said well for receiving pressure impulses from the well and for measuring the lapse of time between the creation of the impulse and the arrival at said receiving means of the echo from said obstruction,' and

"(D) 'means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars of said tubing sections to clearly distinguish the echoes from said couplings from each other.'

"Each of B, C and D describes a function but, appellant contends, fails to describe how the apparatus is to perform the function, as required by R. S. 4488, 35 U. S. C. Sec. 33, cf. General Electric Co. v. Wabash, 304 U. S. 364, 368.

"No case is cited in which such a combination of means alone has been sought and the case seems of novel import. It is apparent that a combination of three means is valid only if a combination of all the various means for accomplishing each of the three functions is to be deemed included in the claim. It would establish invalidity of the patent if prior thereto any one of the several means of each of the all-inclusive means so had been combined.

"Appellant has shown no such prior combination of any one of each of the three means. General Electric Co. v. Wabash, *supra* is distinguishable. Unlike the instant patent for a combination, the patent there was for a specific product and its production was described in functional instead of a specific physical determinant. Since the combination of all such means has novelty and usefulness, I agree in the denial of the petition for rehearing."

Certainly Mr. Walker has made a meritorious invention in solving a problem for the oil industry that in spite of many attempts no one before him had succeeded in solving.

As stated by Judge Healy in the opinion of the Ninth Circuit Court of Appeals in the instant case [R. 1599-1600]:

> "Walker made a very substantial improvement over Lehr and Wyatt, notwithstanding it is conceded that both his recorder and his amplifier, considered by themselves, are old in the art. We think the patentee displayed a measure of inventive genius entitling him to patent protection. He has combined features which achieve a new result, or at least an old result in a better way. Cf. Bates v. Coe, 98 U. S. 31, 39; Walker on Patents (Deller's Ed.), Vol. 1, p. 255, and cases there cited.
>
> "Other prior patents cited by Halliburton, as for example the patent of Tucker, No. 1,351,356, which was to aid in locating the source of gunfire, were not designed to perform the same function as Walker's tuning device, and would not, without the addition of other elements, serve the purposes of the Walker patent. The Tucker patent mentioned was among the examples of the prior art cited by the examiner. We think, too, that Walker specified and claimed his improvements with sufficient distinctness and clarity to comply with the statute."

Also in the opinion of the Ninth Circuit Court of Appeals on a petition for rehearing, Judge Healy stated [R. 1614]:

> "In its petition for rehearing appellant, Halliburton Oil Well Cementing Company, assumes that the

court in ruling on Walker's patent No. 2,156,519 failed to consider the cases of General Electric Co. v. Wabash Appliance Corp., 314 U. S. 364, and Davis Sewing Mach. Co. v. New Departure Mfg. Co., 217 Fed. 775, particularly the first of these decisions. Halliburton is mistaken. In the General Electric case the claim considered was not one for a combination of elements, but a claim for a single element. Here, the claims are for a combination of elements. They sufficiently define the limits of the invention to enable those having knowledge of acoustics and of the principles of the physics of sound to determine what is covered and what is beyond the scope of the claimed invention."

Point (8):

When the invention disclosed in a patent is an apparatus made up of the combining together of several different pieces of mechanism to accomplish a new result, the inventor is entitled to claims which are sufficiently broad as to cover not only the typical specific embodiment of that apparatus which is chosen to be illustrated in the drawing and described in the specification as *one form in which the invention may be practiced,* but also to cover other specific forms of the elements which go to make up the combination.

The only way in which the invention may properly be expressed if the claims are to have any breadth is to use broad inclusive terms in reciting each of the component elements which go to make up the combination.

For many years it has been recognized that the proper manner—in fact, the only manner in which such claims may be couched in broad terms—is to define the elements

as a "means" or "mechanism" followed by a statement of the functions which the "means" is to perform in combination with the other elements of the combination.

This manner of drafting claims of breadth directed to a combination of mechanisms was approved many years ago in the case of *Continental Paper Bag Company v. Eastern Paper Bag Company*, 210 U. S. 405, and this approved manner of drafting that type of claim has been the pattern and criterion to which substantially all claims to combinations of machine elements have been drawn.

In no case prior to petitioner's contention here has that mode of expression for claims to a combination been criticized *where the several elements of which the* combination is made are old and known in the art prior to the inventors' combining together these old and well known elements to form a new machine and to perform a new result. In no case cited by petitioner has a criticism been directed to claims of this type on the ground that they are indenite or "functional" where the inventor has combined together a number of known pieces of machinery but has combined them in a new way to produce a new result. Petitioner admits that each of the separate elements defined in the Walker claims was old and well known, and further petitioner asserts that those specific elements which it employs were also old and well known. The only things petitioner does not admit is that petitioner's gun is well recognized in the art as a substitute for the tank of gas and quick opening valve of the patent in suit; that the electrical recorder with its microphone is a well known mechanical equivalent and substitute for a diaphragm-mirror-light beam recorder for recording changes in gas pressure in pipes, vessels and the like;

and that an electrical filter is so commonly recognized in the field of physics of sound as a means for filtering out or suppressing undesirable noises and permitting the desired frequencies of sound to more readily pass through the electrical system and to stand out (be accented) above the undesired extraneous noises and is considered by engineers in this field of sound as a substitute for an acoustical filter such as a predetermined length of pipe or tubing shown in the patent in suit. [But see MacKeown, R. 336, 435, 346-348.]

Thus the Walker claims express each of the three elements of the Walker new combination with ample particularity to tell the public, and particularly those members of the public familiar with the art to which the invention relates, *exactly what apparatus can be used to successfully practice the Walker invention.*

SUPREME COURT APPROVED THIS LANGUAGE FOR "COMBINATION" CLAIMS:

In the case of *Continental Paper Bag Company v. Eastern Paper Bag Company*, 210 U. S. 405, 28 Sup. Ct. 748, one of the claims under consideration is set out on page 750 as follows:

> "'In a paper bag machine, the combination of a rotating cylinder provided with one or more pairs of side-folding fingers adapted to be moved toward or from each other,
>
> a forming plate also provided with side-forming fingers adapted to be moved toward or from each other,
>
> *means for operating said fingers at definite times during the formative action upon the bag tube,*

operating means for the forming plate adapted to cause the said plate to oscillate about its rear edge upon the surface of the cylinder during the rotary movement of said cylinder;

the whole operating for the purpose of opening and forming the bottom of the bag tube,

and means to move the bag tube with the cylinder.'" (Italics ours.)

Also at 750, the Court states:

"'The pith of . . . (the) invention,' the circuit court said, 'is the combination of a rotating cylinder with means for operating the forming plate in connection therewith, limited, however, to means which cause the plate to oscillate about its rear edge.'"

Thus in 1907 the Supreme Court when considering a claim to a new combination of machine elements expressed its approval of the choice of language to define the invention as a "means" followed by the statement of the function such element is to perform in combination with the remaining elements.

At 751, the Court states:

"We think it is clear that the court considered that Liddell sought to comply with Sec. 4888 of the Revised Statutes (U. S. Comp. Stat. 1901, p. 3383). In other words, he filed a description of his invention, explained its principle and the best mode in which he 'contemplated applying that principle' and did not intend to give up all other modes of application. An inventor must describe what he conceives to be the best mode but he is not confined to that. *If this were not so most patents would be of little*

worth. 'The principle of the invention is a unit, and invariable; the modes of its embodiment in the concrete invention may be numerous and in appearance very different from each other.' 2 Robinson, Patents, Sec. 485. The invention, of course, must be described and the mode of putting it to practical use, but the claims measure the invention." (Italics ours.)

and at 752, the Court states in considering the breadth of language in which the invention was expressed in the claim:

"The distinction between a practically operative mechanism and its function is said to be difficult to define. Robinson, Patents, Secs. 144 *et seq.* It becomes more difficult when a definition is attempted of a function of an element of a combination which is the means by which other elements are connected and by which they coact and make complete and efficient the invention. But abstractions need not engage us. The claim is not for a function, but for mechanical means to bring into working relation the folding plate and the cylinder. This relation is the very essence of the invention, and marks the advance upon the prior art. It is the thing that never had been done before, and both the lower courts found that the machines of the Continental Company were infringements of it. It is not possible to say that the findings of those courts on that fact or on the fact of invention were clearly wrong, notwithstanding the great ability of the argument submitted against them."

Thus in the *Continental Paper Bag* case, the Court, when faced with a consideration of claims to a combination in which the elements were defined as "means" fol-

lowed by the statement of the function that means was to perform in the combination, approved that mode of expression in spite of the fact that the very same contention as is here expressed by petitioner was urged in that case as an argument that the claims were improperly worded.

WALKER TYPE OF CLAIM IS TYPE APPROVED BY COURTS:

It is too well known that this approval of the mode of expression of combination claims in the *Continental Paper Bag* case has been cited and followed in innumerable subsequent patent infringement decisions and no purpose would be accomplished by attempting to list here the many subsequent decisions which cite and follow the principle expressed in the paper bag decision.

In the case of *Buono et al. v. Yankee Maid Dress Corporation*, 77 F. (2d) 274, in considering a claim to a combination expressed in language of "means" followed by a statement of the function the means will perform in the combination, Judge Learned Hand states at 277:

> "The only debatable matter is of the language of the claims themselves; it is the old question of how far a claim may safely be cast in terms of function. * * * The other elements of claim 6 except a single one are in mechanical terms referable to the disclosure, and are clearly not functional. The exception is, 'operating means connected to said eccentric device and turning said pivoted device at predetermined intervals.' This too is readily enough identified by the disclosure, and though it does speak in terms of function that is inevitable to some degree, if the claim is to have any generality whatever.

The very test of equivalency is in terms of function, 'the same result by the same means'; and it is only by recourse to that standard that a patentee can pass beyond the very details of his disclosure. * * * In the case at bar the phrase was justified because the invention did not reside in the mechanical train connecting the eccentric with the table, but in a train which should tilt it at intervals longer than the oscillations of the rib. *The details not being important, the general notion so embodied the inventors might protect."*

PETITIONER CITES NO PERTINENT AUTHORITY AGAINST WALKER TYPE CLAIMS:

Petitioner, on pages 50 through 68 of its brief, cites some twenty-eight cases as condemning the "means" language to define a new combination. None of them are pertinent and the instant case is readily distinguishable from the facts in each of them as follows:

(1) *Rice v. Nash Kelvinator Corp.*, 150 F. (2d) 457

The specifications did not tell how to determine the size of the capillary tube and the public would have to resort to *experiment* to find out how to practice the invention (See page 460 of the report).

The capillary tube was a *new* element, not one "old in the art" as petitioner admits were Walker's individual elements.

(2) *Application of Horton, et al.*, 151 F. (2d) 210

Some claims were refused *as reading upon* prior patents. Decision does not condemn all "means" type of claims, *in fact*, the Court granted two other claims defined in "means" language. (See Claims 34 and 46, page 210 of the report.)

(3) *Kool Kooshion Mfg. Co. v. Mitchell Mfg. Co.*, 102 F. (2d) 37

The Court's decision was on "non-infringement," and did not rule on validity. Quoted statement is only *dicta*.

(4) *Allen-Bradley Co. v. Erie Resistor Corp.*, 104 F. (2d) 150

The claim was like that of *General Electric Co. v. Wabash* case—*a single means product* claim. The claim was "meaningless" (see page 152 of the report).

(5) *Hazeltine Corp. v. Emerson Television-Radio, Inc.*, 129 F. (2d) 580

This was not a claim using "means" limited by its function. The Court did not rule on validity but this case turned on "non-infringement."

(6) *In re Cohen*, 133 F. (2d) 924

The claims were refused, *not because of the type of language* but as readable on prior art. The only language criticised was for the reason that the material was not disclosed in the specification. (See page 928 of the report)

(7) *Timken Detroit Axle Co. v. Cleveland Steel Products Corp.*, 148 F. (2d) 267

The claims were held invalid over prior art because of *lack of disclosure in the specification to support them*, not because of the "means" type of language.

(8) *Mead Johnson & Co. v. Hillman's, Inc.*, 135 F. (2d) 955

The claims were for a *product* and were single means claims. The Court found them *invalid* as "no invention over prior art."

(9) *Minnesota Mining & Mfg. Co. v. Coe,* 113 F. (2d) 512

The claim was a *product* claim and was *anticipated by prior art.* (See pages 513, 514 of the report.)

(10) *Universal Oil Products Co. v. Globe Oil and Ref. Co.,* 322 U. S. 471

Claims were *process* claims, held invalid for *lack of invention.*

(11) *John Bean Mfg. Co. v. Creagmile,* 123 F. (2d) 182

The quoted statement is *dicta* only. The claims were held invalid *for want of invention and anticipation.*

(12) *Farmers Cooperative Exchange v. Turnbow,* 111 F. (2d) 728

The claims were *product* claims and failed to specify the "quantity or proportion of the ingredients." The holding of invalidity was correct since the facts were the same as those in the *General Electric Co. v. Wabash* case.

(13) *Lincoln Engineering Co. v. Stewart-Warner Corp.,* 303 U. S. 545

The attack here was that the *entire combination was old* and that the improvement was merely an improvement in one of the elements. This is no ruling on how to define a *new* combination, as in the *Walker v. Halliburton* case.

(14) *Krause v. Coe*, 120 F. (2d) 717

The claims were not the Walker type of claims. There was no question raised as to the claim language and the *claims were refused for lack of invention.* (Why petitioner cites this case is a mystery, unless it is because the now Chief Justice Vinson wrote the opinion.)

(15) *Tyden v. Ohio Table Co.*, 152 Fed. 183

While the language of the opinion refers to function, the decision actually hinged on the fact that the *entire combination was old* and Claim 1 failed to define over the prior art. In a later case, *William B. Mershon & Co. v. Bay City Box & Lumber Co.*, 189 Fed. 741, at 749, the *Tyden* decision was explained as follows:

"In that case, the means shown was so ordinary and common, and the device so lacking in invention, * * * as to compel the conclusion that the patentee intended to claim the *result*, by whatever means accomplished.' (Italics ours.)

(16) *Davis Sewing Machine Co. v. New Departure Mfg. Co.*, 217 Fed. 775

This case specifically approved the "means" terminology in defining a combination of elements and cites the *Paper Bag* case as follows, on pages 783 and 784:

"In the latest reported decision touching this point (the Paper Bag Case) * * * The Supreme Court held, in effect, that the use of these general terms is

not objectionable in cases where the element so identified serves to provide a 'working relation' for what may be called the more primary elements of the combination. * * *

"In none of the cited decisions of this court especially relied upon in argument do we find any holding that a claim calling for 'means' is thereby, and thereby only, made functional; but, if there were any such holding, it must yield to the rule of the Paper Bag Case. These considerations demonstrate to us that the call of claim 19 for 'a brake mechanism' does not make the claim functional or invalid, and that this claim is infringed. The same considerations govern the use of similar phrases and terms in claims 25-30." (Parenthetical insert ours.)

(17) Referring to *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U. S. 405, petitioner attempts, on pages 58 to 60 of its brief, to distort the language of the *Paper Bag* opinion to say in effect that functional statements directed to *the novel element* were disapproved. The opinion there was that the novelty in the patent *was in the combination* and that the "means" clauses *were not for a function* but were the only proper way to define the "mechanical means to bring into working relation the folding plate and the cylinder. This relation is the very essence of the invention and marks the advance upon the prior art."

(18) None of the cases cited by petitioner on pages 61 and 62 of its brief were decided upon the proposition advanced by petitioner and a discussion of them would only needlessly lengthen this brief.

Point (9):

Petitioner is here seeking to have this Court distort its decision in the *General Electric Company v. Wabash* case to apply the doctrine to a completely different state of facts and to a completely different type of claim than was considered in the *General Electric* case. To do so will be for this Court to overrule the approval of the type of claim which was approved in the *Paper Bag* case and in effect to hold that the entire scope of protection to the patentee Walker is limited to the very details of the one form or embodiment chosen by Walker to illustrate and teach the principles of his invention.

To do so would in effect require this Court to establish an entirely new principle in the law of patents, namely, that no matter how meritorious an invention, no matter how much of an advance the inventor had made in the art, the only protection he can obtain is limited to the specific details of one embodiment of mechanism to practice his invention. To do so would not only destroy the protection which the Patent Office clearly intended to give to the patentee Walker but would utterly destroy thousands of patents on meritorious inventions in machine combinations.

CONCLUSION AS TO QUESTION NO. 1:

From the foregoing it is clear that both Walker and the Patent Office were fully cognizant of the specific electrical type of apparatus now used by petitioner and both fully intended that the very claims in suit should cover petitioner's apparatus. It is clear that the Patent Office, as an expert tribunal on what types of apparatus are the equivalents in patent law to other apparatus, fully

recognized the equivalency of petitioner's apparatus to the specific embodiment Walker discloses in the drawing and specification of his patent. It is clear that had Walker and the Patent Office not recognized such equivalency, then all of the claims of Walker's patent would have been limited to the specific embodiment, as was Claim 2.

It is clear that in the *General Electric Company v. Wabash* case this Court was faced with facts completely different from those in the instant case in that the type of invention was different (a single element claim) and the language of the claim did not set out the invention in any manner which would apprise the public as to what grain sizes would fall within the terms of the claim and what would be excluded.

In the instant case Walker fully disclosed the principles of his invention, in detail described one form or embodiment of the invention, and defined his new contribution in the claims in language which clearly informs the public what is covered and what is not.

It follows that each of the claims in suit is valid and is infringed by petitioner's apparatus.

ARGUMENT AS TO QUESTION NO. 2:

The fallacy of petitioner's reasoning as to Question No. 2 is so apparent as scarcely to merit consideration. In fact, at the original hearing in this case in January, 1946, petitioner's counsel thought so little of this question that he devoted his entire argument to Question No. 1.

In effect, petitioner is contending that if a patentee is granted a patent with broad claims and later in a second

application seeks specific claims to an improvement and in the latter application the Patent Office holds that the improvement is not patentable over his first patent, then the Courts must find that patentee's acquiescence to the rejection in his later application automatically extends a limited interpretation to the broad claims in his first patent.

The absurdity of such position is made apparent by the fact that if petitioner's contention was the law, an inventor who had received a broad patent upon his invention would not dare file an improvement application for fear that in the prosecution of that application the cancellation of a rejected claim to the improvement would limit his first patent so that it could not cover known and recognized equivalents of the structure broadly claimed in the first patent.

Petitioner admits that the facts in the instant case are entirely different from those considered in the *Schriber-Schroth Co. v. Cleveland Trust Co.* case and has admitted that no case can be found which supports the position petitioner urges here.

Briefly stated, the facts in the *Schriber-Schroth* case were that the patentee filed an application for a patent upon a piston and did not in the original application attribute any virtue to making the webs of the piston flexible. Later in the prosecution of the application by amendment there were inserted *in that same application* claims specifically reciting flexibility of the webs, which claims were subsequently canceled as the result of an interference and the claims in suit were inserted in the application *omitting reference to the flexibility of the webs.*

In the subsequent litigation on the claims which were allowed, the patentee urged that the patent claims included the feature of flexibility of the webs.

The Court in the *Schriber-Schroth* case found that the patentee had never asserted that the flexible webs were his invention and, in fact, by cancelling such claims from his application, admitted that he was not the inventor of the flexible webs. Then the Court rightly held that the claims which were allowed could not be construed to cover a construction which the inventor admitted was not his invention.

In the instant case the facts are totally different. Walker filed the application which resulted in the patent in suit, disclosing one embodiment of his invention and claiming his invention in broad claims (the claims in suit) and in other narrow claims such as Claim 2. The Patent Office allowed the patent in suit with the broad claims and also with the narrow claims specific to the embodiment illustrated and described.

In a subsequent and independent application, Exhibit L, Walker disclosed electrical apparatus which among other things would accomplish the result of obtaining fluid level measurements by the combination of certain electrical apparatus. During the prosecution of the second application, a claim, Claim 35, which was specific to the electrical apparatus, was rejected by the Patent Office as being merely the equivalent of the structure described and claimed in his earlier patent and hence unpatentable over

the disclosure and the claims of Walker's earlier patent, the patent in suit. The Patent Office, in effect, stated to Walker:

> "The subject matter of Claim 35 is already included in and covered by your earlier patent and a claim to the same subject matter will not be given to you in this later application."

Walker then acquiesced to the rejection and canceled Claim 35.

In the *Schriber-Schroth* case the patentee canceled the claims including flexibility of the webs because it was not a part of his invention. In the instant case Walker canceled the electrical apparatus claims because the Patent Office *ruled that the patent in suit already contained claims adequately covering the electrical apparatus.*

It follows that Walker's acquiescence was merely an acknowledgment that the patent in suit was enough to protect him against another's use of electrical apparatus and to attempt to construe this acknowledgment as an admission that his first patent did not cover electrical means is as absurd as to say an acknowledgment that a thing is black is to admit that it is white.

To follow petitioner's reasoning would create the absurd situation that one patent contract, having been entered into by the Patent Office and the inventor giving to the inventor broad claims covering his invention, could have its terms subsequently altered by subsequent negotiations between the inventor and the Patent Office in another application for a subsequent patent contract.

To construe the terms of one contract, one may examine the negotiations *which led to that contract* but it is im-

proper to examine subsequent negotiations leading to an entirely different and independent contract to interpret or limit the terms of the previous contract.

Particularly it is both bad law and bad reasoning to say that the negotiations expressed in the file history of a subsequent application can be used to alter the terms of a previously granted patent when the file history of the previously granted patent so obviously shows the intention that the previous patent should cover the electrical apparatus. As pointed out above, the file history, Exhibit T, which resulted in the patent in suit, clearly evidences the intent by both Walker and the Patent Office that the claims of that patent should cover electrical apparatus such as that used by petitioner.

CONCLUSION AS TO QUESTION No. 2:

From the foregoing it is clear that the doctrine expressed in *Schriber-Schroth Co. v. Cleveland Trust Co.*, decision was merely that it is proper to consult the file history of the application which resulted in a patent in suit to determine what the inventor admitted was not his invention as a means of interpreting the scope of the claims in that patent. It is equally obvious that that decision set up no precedent permitting the inspection of the file history of a subsequent patent as a means of limiting the scope of claims which had previously been granted in another and earlier patent.

Most obvious of all, it was not the intention of this Court to establish any principle which would make a patentee fearful of attempting to patent improvements upon a previously patented device because by so doing he would impose limitations upon the claims of his early

patent *contrary to the intent, fully expressed in the first patent, that that patent was to be broadly construed.*

Petitioner is certainly grasping at straws to impose upon this Court the obligation of even considering a so distorted viewpoint.

Conclusion.

It is respectfully submitted therefore:

(1) That the patent in suit adequately discloses the patentee's invention and teaches the public how to practice the invention;

(2) That it was the intention, both of the Patent Office and Walker, that the claims in suit were to be broader than merely cover the specific embodiment of the invention illustrated and described;

(3) That it was the intention of both Walker and the Patent Office that the claims in suit should be construed to cover the apparatus of the type used by petitioner;

(4) That the definition of the invention in the claims of the patent in suit is clear, concise and clearly informs the public of the limits of the invention covered thereby;

(5) That the facts of the instant case are so clearly distinguishable from the facts of the *General Electric Co. v. Wabash Appliance Corp.* case that the principle applied in that decision cannot be invoked to invalidate the claims of the Walker patent;

(6) That petitioner is seeking to have this Court overrule the principles approved in the *Continental Paper Bag Company v. Eastern Paper Bag Company* case and in effect to limit *all* of the claims of a patent to cover only

the specific embodiment used in the drawing and specification to teach the principles of the invention;

(7) That petitioner is seeking to have this Court establish the principle that no matter how meritorious an invention may be or how broad the intended scope of the claims, the patentee must in his drawing and specification illustrate and describe *every conceivable equivalent of his preferred embodiment of the invention;*

(8) That the intendedly broad claims of the patent are not to be limited in their scope by the patentee's admission in a later application that electrical apparatus is the full equivalent of the mechanical apparatus disclosed in the patent in suit and that such equivalents are covered by the claim in suit.

It is therefore respectfully submitted that the claims of the patent in suit are valid, that they are infringed by petitioner's apparatus, and that the decision of the Circuit Court of Appeals should be affirmed.

Respectfully submitted,

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Los Angeles, California,
October 10, 1946.